

CASE REPORT

Popliteal Artery Entrapment Caused by a Bony Exostosis

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Introduction

Popliteal artery entrapment is usually due to an abnormal course of the popliteal artery in relation to the medial head of gastrocnemius. Other variations are recognised and a simple classification has been described.^{1,2} The ability of exostoses to displace arteries is not uncommon but more severe complications, such as thrombosis, are rare. We report a case of popliteal entrapment due to a bony exostosis causing arterial thrombosis.

Case Report

A 41-year-old man presented with pain and paraesthesia in his right calf on walking. His walking distance had worsened over the previous six months and was limited to 100 m. He was a former smoker but was otherwise fit and had no significant cardiovascular history.

On examination all peripheral pulses were palpable except those in his right foot. The ankle-brachial pressure index (ABPI) was reduced to 0.75 on that side. Plain radiography showed an exostosis arising from the posterior aspect of the tibia. Intra-arterial angiography revealed an occlusion of the popliteal artery at the level of this exostosis. (Fig. 1). Thrombolysis was attempted but only minimal clearance was obtained.

His symptoms persisted and exploration of the popliteal artery using a posterior approach was therefore undertaken. At operation, a small exostosis was found arising from the posterior surface of the upper tibia and impinging on the neurovascular

bundle, displacing it laterally. The exostosis was removed and a thrombectomy, through a transverse arteriotomy in the popliteal artery, was successfully performed. Postoperatively he made a good recovery. Two years later, he has no claudication, normal foot pulses and an ABPI of 1.1. However, his paraesthesia persists presumably due to tibial nerve damage by the exostosis.

Discussion

Popliteal artery entrapment syndrome (PAES) is an unusual cause of peripheral vascular symptoms in young adults. It may present as pain in the leg related to exercise and relieved by rest or with symptoms related to thrombosis or aneurysm formation.

Angiography is the standard investigation for diagnosis of PAES but at rest the appearance of the artery may be normal and an abnormality may only be visible if views are taken during active plantar flexion. Magnetic resonance angiography can further demonstrate anatomical deviations and flow patterns of the popliteal artery. The management of PAES, whether due to muscular or bony pathology, consists of releasing the entrapped artery and dealing with local arterial pathology to restore flow. At the time of presentation, arterial wall damage has usually occurred and simple arterial release is unlikely to be adequate. Endarterectomy or angioplasty may be sufficient but bypass grafting using autologous vein is sometimes needed if the vessel is occluded although long-term patency rates may be less than 60%.³

Exostoses commonly occur around the distal femur and proximal tibia. Pseudoaneurysm of the popliteal artery due to an osteochondroma impinging on the

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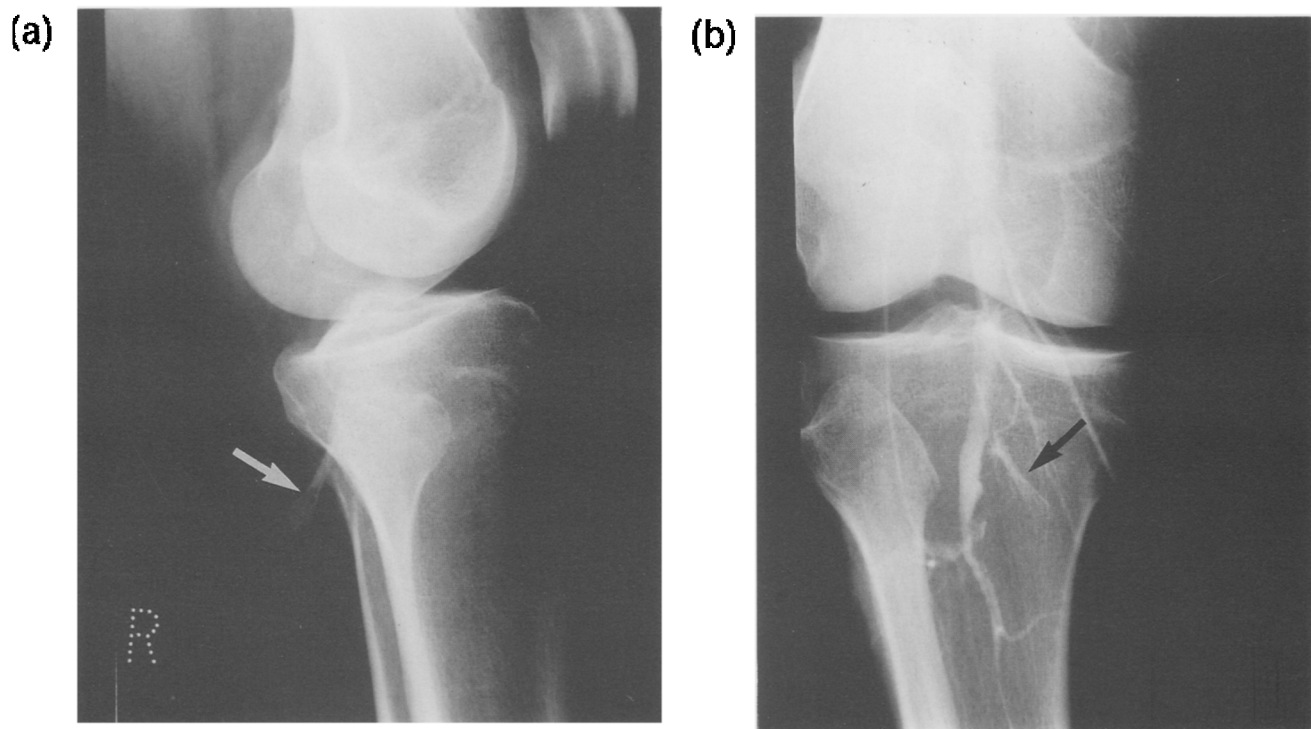


Fig. 1. (a) Lateral radiograph of the knee joint showing the exostosis (arrowed) arising from the posterior surface of the proximal tibia. (b) Angiogram showing displacement and occlusion of the artery at the level of the exostosis (arrowed).

vessel is well described.⁴ However, thromboembolic complications of bony lesions in this region are uncommon.⁵ This case is unusual because of the pathology causing the symptoms. It also serves as a reminder that popliteal artery entrapment should be considered as a cause of claudication in young fit individuals.

References

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